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KNOWLEDGE

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OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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Leading on the Edge

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OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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Kelly Widener Director of Strategic Communications

Julie Shelley Managing Editor
Bob Van Elsberg Editor
Chris Frazier Editor
Paula Allman Editor
Blake Grantham Graphic Design
Leslie Tisdale Graphic Design

We welcome your feedback. Please e-mail comments to **knowledge@crc.army.mil**.

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> "We must take **OWNERSHIP** of our **ACTIONS** and those of our teammates. The first team's power thought, '**I CAN SAVE MY OWN LIFE**,' is indeed powerful but could be more so if we add '**AND MY TEAMMATES**.'"

ARMY STRONG, ARMY SAFE

Great things are happening in our Army today. We're not just "Army Strong," we're also "Army Safe." In my opinion, our Army is doing more today than any other time in recent memory. But I also believe our continued successes are the direct result of actions from the entire Team, contributing in ways we might not have in the past. We must ask ourselves, "How can we execute everything we have before us today, including successively more difficult missions, and do it all safely?" That rhetorical question is a GREAT topic for discussion!

The number of technical safety experts within our formations is limited. It's probably accurate to say that, except for aviation units, there's just one full-time professional safety officer at brigade level in most units today. Fortunately, the Army recently received approval to hire the extremely valuable civilian safety professionals now embedded at brigade level. These folks deploy, execute mission sets, redeploy and make the same sacrifices as our Soldiers while making significant contributions to combat readiness.

However, there simply aren't enough of these safety professionals to go around. They can't be with us all the time to remind us what's important. We must augment their efforts, and this is where the power of YOU comes into play. We must take ownership of our actions and those of our teammates. The first team's power thought, "I can save my own life," is indeed powerful but could be more so if we add "and my teammates." There's indeed power and a combat multiplier in protecting our teammates. Remember, if you don't, you'll operate with less than you came.

All of us are leaders with a responsibility to look out for our comrades. We should acknowledge a fallen comrade isn't just someone who's in a hot landing zone or taking fire in a Baghdad alleyway. A fallen comrade might reveal themselves to us as one too tired to drive to drill or home on leave, or one riding their new motorcycle without a helmet or proper training, or one depressed to the point of suicide or suffering the effects of sexual assault.

As an Army of leaders engaged at all echelons, we're required to look at each other and ask, "Are you ok?" Let's commit to lead at the levels we're trained, get the mission accomplished and then lead some more. Your job as a Soldier and a leader never ends. Take care of yourself and take care of each other. If you don't, who will? «

William H. Forrester
Brigadier General, USA
Commanding

ENGAGED LEADERSHIP: IT WORKS!

When I was just a lieutenant back in 1989, I learned the hard way what happens when Soldiers don't follow the rules. I was a platoon leader, and one of my Soldiers died in a vehicle accident. I'll never forget that Soldier or the lessons I learned following his accident. Another Soldier from a different platoon chose to drive drunk one night, and my Soldier made a decision to get in the vehicle with him. The other Soldier survived the accident and was charged with vehicular manslaughter.

Several years and promotions later I was assigned as a battalion commander. Going into this command, I promised I'd do everything in my power to make sure we didn't lose a single Soldier to an accident. I believe all accidents are preventable IF leaders at all levels stay engaged. In keeping with that philosophy, we kept safety at the forefront of every Soldier's mind without hindering our mission.

I don't know how many lives we saved, but I can tell you we didn't lose even one Soldier to an accident. We'd logged more than 450 accident-free days as I relinquished command, and the post commanding general recognized the unit's success with a safety award. Just over a year later, the unit is still in the top quartile of the Army Readiness Assessment Program. So, how did we do it?

First, let me say I'm writing this article anonymously because the success of this battalion's program isn't about me. It's about the sacrifice, discipline and attention to detail these Soldiers demonstrate every day, a true team effort to keep everyone in the fight to preserve combat power. The credit doesn't go to me, but to the brave Soldiers and leaders that get to the core of preventing needless accidents. I was blessed just to be a part of this great success story, and I have the highest respect for the current commander who's doing his job so well.

I think the biggest factor in our success was engaged leadership. We held leaders at every level, especially our squad and junior leaders, accountable for their Soldiers' actions. I occasionally spoke with all leaders (corporal and above) about their engagement and safety responsibilities, and the battalion command sergeant major would talk with Soldiers about discipline and safety awareness. We made it clear every leader had a responsibility to identify high-risk Soldiers and implement controls to keep those Soldiers in check.

Undoubtedly, command emphasis is important; however, we believed the center of gravity for preventing accidental loss was the squad leader. As first-line supervisors, squad leaders spend more time with and know their Soldiers better than anyone else. We allowed time every Friday for squad leaders to talk with their Soldiers in a format similar to U.S. Army Europe's "Under the Oak Tree

DID YOU KNOW?

Make sure your Soldiers are ready for the mission by using the Army Readiness Assessment Program. It's a Web-based initiative that provides battalion-level commanders with data on their formation's readiness posture. Check it out today at https://unitready.army.mil/.

> "To make sure everyone was **LISTENING**, we sometimes called for **VOLUNTEERS** to give the weekly safety brief. This practice was a **BIG SUCCESS**; our volunteers always did a **SUPERB** job telling their fellow Soldiers to **STAY OUT OF TROUBLE** and be safe."

Counseling." When the squad leader was finished, the platoon leader and sergeant, followed by the company commander and first sergeant, addressed their Soldiers. Finally, I gave a safety brief before releasing the Soldiers for the weekend.

This process, which included interaction from all levels of leadership, occurred every week. To make sure everyone was listening, we sometimes called for volunteers to give the weekly safety brief. This practice was a big success; our volunteers always did a superb job telling their fellow Soldiers to stay out of trouble and be safe. We also occasionally invited military police and Mothers Against Drunk Driving representatives to speak at the final formation.

The battalion was very aware of the top hazards that could seriously injure or kill our Soldiers. We spent a lot of time putting controls in place to eliminate all types of accidents, including POV, motorcycle, combat logistical patrol, weapons handling, maintenance and swimming, to name a few. We completed a risk management worksheet for every major on-duty event, and the CSM and I received a back brief on the risk assessments for these missions.

Obviously, motorcycle and POV accidents were a huge concern. All motorcycle riders signed a contract with the battalion and their company commanders, and I personally conducted a one-on-one counseling session with them. We also began a mentorship program where we paired experienced bikers with novice riders so they could share their knowledge of the road. The buddy system was a big part of our success as well. Every Soldier was assigned a battle buddy to help keep each other straight, especially after duty hours. In addition, we conducted mandatory POV inspections and risk assessments before every three- or four-day weekend.

Products from the U.S. Army Combat Readiness Center, including preliminary loss reports, the ASMIS-2 POV Risk Assessment Tool (now TRiPS), posters, videos and other media, also helped us stay accident free. We distributed and discussed the latest PLRs with our Soldiers every week at final formation, emphasizing hazards and controls. Every Soldier had to complete an ASMIS-2 assessment before being released for pass or leave with no exceptions. The videos were invaluable for safety stand-down days, and we hung the posters in common areas for maximum exposure.

Here are some additional TTPs that worked for my unit:

- Mandatory quarterly safety councils
- Incentives and awards
- Newcomers' briefs—an excellent opportunity to indoctrinate new Soldiers in the battalion's safety culture

If you're a leader reading this article, get and stay engaged. Command involvement down to squad level enhances the commander's safety program and keeps our Soldiers in the fight. We turned the arrow down in fiscal 2006, so continue to do your part in preventing accidental loss. You ARE making a difference! «

FROM THE HEART

CW2 PAUL DEVINCENZO
Pennsylvania Army National Guard
Fort Indiantown Gap, Pa.

In the good old tradition of the military, our Army Aviation support facility recently changed command. As the AASF and airfield safety officer, I met extensively with our new commander regarding the unit's safety program. I reminded him that in accordance with Army Regulation 385-95, *Army Aviation Accident Prevention*, paragraph 1-6 (2), all commanders will establish a written commander's safety philosophy.

A new aviation commander, be it a second lieutenant or colonel, must take writing a safety philosophy letter very seriously. He should write the letter using his heart first and his brain second. That letter is sometimes his first official correspondence to the unit, and it might be published while his Soldiers are still forming their impression of him.

What kind of message does a "cookie-cutter" or "check-the-block" safety philosophy letter send to the unit? This is an excellent opportunity for new commanders to make a positive first impression, but many don't take the task seriously. Trust me, I've read my share of poor aviation safety philosophy letters.

They're often cold, emotionless, bureaucratic ramblings that simply regurgitate the Army's basic policy toward risk management and accident avoidance. The worst safety philosophies are the ones that look suspiciously like the previous commander's letter. Others might mimic the higher-level commander's safety philosophy.

A written safety philosophy isn't an officer evaluation report support form! You don't have to write it to be synchronized with your higher-level commander. There's no heart in those safety philosophies. This one is yours, not your predecessor's or your boss's.

The best safety philosophy letters I've seen aren't overly long, but they contain emotion and heart. A commander often will relate his previous experiences as a pilot or pilot-in-command. He might recount an accident, mishap or near-miss incident that left a profound impression on him. Emotion is perfectly all right in a safety philosophy letter. They add a human touch and show the commander cares about his people's safety.

We use risk management to make good, safe decisions, and references to the process are appropriate in a well-written safety philosophy. Emotion and heart, however, aren't appropriate in the risk management process. This is where a commander's safety philosophy must transcend the process. The safety of the unit's personnel and their family members is very much about emotion and heart.

New commanders should remember it's not a requirement to focus exclusively on aviation safety in their philosophies. Ground, POV and home safety are acceptable topics and should be included as well. Adding this information might also be helpful for relatively inexperienced aviation commanders who don't have a lot of experience to draw from.

That's my take on a commander's written safety philosophy after 26 years in Army Aviation. Not everyone will agree with me, but the beauty is the commander has the latitude to make his safety philosophy as personal, unique and emotional as he sees fit. When you write it, write it from the heart. Your Soldiers deserve nothing less. «

SPEAK UP!

CW3 RICHARD GRIFFIN
Kentucky Army National Guard
Frankfort, Ky.

Some years ago, I learned the value of speaking up for what's right, regardless the consequences. Early in my career as an Army Aviator, I was told to close my pie hole and open my ears so I might learn something. I was careful not to judge other pilots' mistakes harshly because someday I might do something less than brilliant. Whether we admit it or not, we've all done something stupid.

My attitude changed when I had the unfortunate circumstance of being in the field with a unit that suffered a catastrophic Class A accident with multiple fatalities. The accident involved a single aircraft with a full crew and several troops on board. Only one passenger and the pilot survived.

The subsequent investigation determined the primary contributing cause of the accident was "hot dogging" the aircraft. The pilot in command was leaving the Army soon and wanted to give the Soldiers in the back a ride they'd never forget; unfortunately, they never got the chance. The aircraft's radar track showed it making radical heading changes, or bank angles, and traveling at an excessive speed before it struck a tree and crashed.

The devastating impact that tragic and totally unnecessary accident had on the unit and the deceased Soldiers' families was fresh in my mind when I took my next assignment a couple of years later. I was at the Joint Readiness Training Center in Fort Polk, La., working as an observer/controller for a sister company from our battalion. My duties included riding in the aircraft jump seat with a radio to monitor the aircraft in flight, ensuring compliance with JRTC rules of engagement.

One day I was told to fly jump seat with a PC I knew well and considered a friend. His career was rocky from the start; he'd had his PC orders pulled several times and was passed over twice for promotion to CW3. He also had a bad reputation for being stubborn and refusing to follow orders, qualities that directly contributed to his problems at work. Despite these setbacks, he'd finally reached retirement, dropped his paperwork and began counting down his last few months in uniform.

The pilot that day was the polar opposite of the PC. A staff captain from battalion, the PI had a meek personality and little flight experience. The PC sensed this and began teasing and intimidating the captain as soon as we got in the air. He was going to show him how you really fly a Black Hawk.

Keeping his promise, the PC, who was on the controls, became increasingly reckless. He was flying low and fast and banking the aircraft excessively, so much so that I had to grab my seat and hold on for the ride. We were behind on the map and flying fast on the confined JRTC real estate, and at one point we over flew a running aircraft at less than 100 feet. He quickly became autocratic and ignored complaints from me and the crew. He just laughed us off as a bunch of whiners.

A crew chief went to the standardization pilot to complain about the PC after the flight. The SP informally interviewed all the crewmembers and the PI and one crew chief corroborated the other crew chief's statement, but with less forceful language than they'd used in flight. He then came to me and asked me point blank if I thought the PC had been unsafe. I hated to dime out my friend because doing so would likely mean the end of his flying and our friendship.

I decided, however, the consequences of not speaking up were much greater and could be permanent, not just for the PC but for the crew and passengers on his aircraft. I admitted I thought he was unsafe and, as I predicted, the PC was grounded and never flew in the Army again. He confronted me later about what I'd said to the SP. I told him the truth, but he didn't agree and we haven't spoken since.

I'll never know for sure if I did the right thing that day or prevented an accident from happening sometime later. Maybe nothing ever would've happened, but I felt the potential cost of not speaking up was too high. We have a small margin of error in our line of work anyway, and no one should ever be allowed to court death under the guise of fun. «

WHO'S NOT TO BLAME?

CPT BILLY EDWARDS
U.S. Marine Corps

Since they were deploying to Iraq soon, the unit's leadership scheduled a night convoy training mission. They arranged the date, time and route and ensured the training vehicles were operational. The commander's intent was to familiarize his Marines with driving under blackout lights and night vision goggles while maintaining dispersion and intervals and maneuvering around obstacles.

All primary and assistant drivers were supposed to wear NVGs and drive under blackout lights through the pre-planned route. The written plan required road guards and signs stating "NVG Driving" to be posted at intersections along the route. No vehicles would be permitted to cross or operate on the paved roads with blackout lights.

The route was a dirt road that crossed a rural highway at two points a little more than a quarter-mile apart. Two road guards wearing fluorescent vests were posted at each crossing to ensure the convoy's safe passage across the 55-mph highway. The guards were supposed to stop the convoy, ensure the highway was clear and direct the vehicles across the intersection when it was safe.

The mission briefer told the drivers to pay close attention to the guards' directions. To help the drivers see the intersections under NVGs, the guards placed infrared glow sticks on both sides of the highway at each crossing. However, they didn't post the required signs at the intersections.

The exercise started without a hitch but was delayed early on when a vehicle suffered mechanical problems. Maintainers fixed the vehicle and the convoy continued through the first intersection. Things started going badly, however, when the convoy approached the second crossing point.

The lead vehicle was a low-back HMMWV that contained four Marines. The driver was fresh out of driving school, but his assistant driver already had one Iraq deployment under his belt. The driver had never operated a HMMWV with NVGs before, so the assistant driver was helping him along the route.

As the convoy approached the second intersection, the two guards stood on opposite sides of the road to look for oncoming traffic. One of the guards saw the headlights of an oncoming vehicle about a quarter-mile away and started walking in its direction, waving his flashlight in a stopping motion. The guard quickly realized the vehicle was a speeding tractor-trailer.

Meanwhile, the lead HMMWV approached the intersection, its driver unaware of the oncoming vehicle and still under blackout lights. The assistant driver told him to pay attention to the road guards because they'd let him know when it was safe to cross. As the HMMWV entered the intersection, the guard who'd spotted the semi motioned his flashlight for the driver to stop while the other guard ran toward the vehicle to stop it.

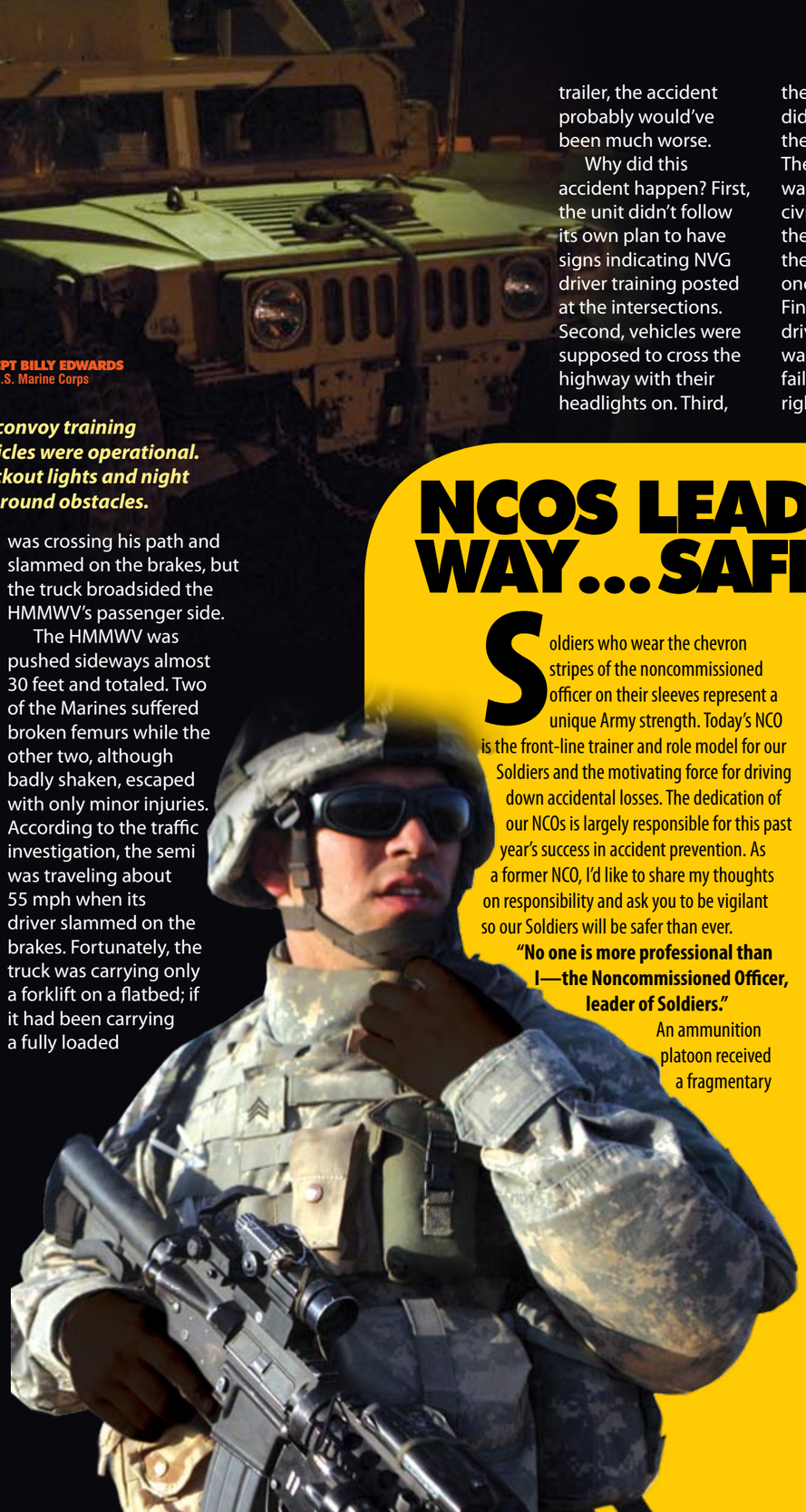
The HMMWV's driver, however, took cues from his assistant driver to keep moving forward. Neither he nor the assistant driver looked left or right before entering the roadway. The driver believed the flashlight signals coming from the guard meant keep driving rather than stop, so he continued driving into the intersection. Seconds later, the semi driver realized a vehicle was crossing his path and slammed on the brakes, but the truck broadsided the HMMWV's passenger side.

The HMMWV was pushed sideways almost 30 feet and totaled. Two of the Marines suffered broken femurs while the other two, although badly shaken, escaped with only minor injuries. According to the traffic investigation, the semi was traveling about 55 mph when its driver slammed on the brakes. Fortunately, the truck was carrying only a forklift on a flatbed; if it had been carrying a fully loaded trailer, the accident probably would've been much worse.

Why did this accident happen? First, the unit didn't follow its own plan to have signs indicating NVG driver training posted at the intersections. Second, vehicles were supposed to cross the highway with their headlights on. Third, the road guards clearly didn't understand their responsibilities. They thought one was supposed to stop civilian traffic while the other would stop the convoy in case of oncoming vehicles. Finally, the HMMWV's driver, new to NVGs, was disoriented and failed to look left or right before crossing the intersection.

This accident could've been prevented if the unit's leaders and individual Marines had followed their own plan and procedures. There's no such thing as a "simple mission," and leaders at every level must ensure their troops understand and follow instructions. Remember, however, that sometimes you have to be that leader and speak up when you know something isn't right. «

Editor's note: This article originally appeared in the Summer 2005 Ground Warrior, *the Marine Corps' ground safety magazine. It was adapted for use in* Knowledge.



NCOS LEAD THE WAY ... SAFELY

1SG (RET) MIKE BARKSDALE
Tactical Safety Manager
U.S. Army Combat Readiness Center

Soldiers who wear the chevron stripes of the noncommissioned officer on their sleeves represent a unique Army strength. Today's NCO is the front-line trainer and role model for our Soldiers and the motivating force for driving down accidental losses. The dedication of our NCOs is largely responsible for this past year's success in accident prevention. As a former NCO, I'd like to share my thoughts on responsibility and ask you to be vigilant so our Soldiers will be safer than ever.

"No one is more professional than I—the Noncommissioned Officer, leader of Soldiers."

An ammunition platoon received a fragmentary order to quickly move to another position. In their haste, they decided to skip the safety briefing. The NCOs failed to brief the convoy route, catch-up speed and hazards of night movement. They also failed to ensure their Soldiers were using seat belts. In the confusion brought on by the rushed departure, one vehicle's driver lost sight of the lead vehicle. His vehicle hit a guardrail and overturned, and three passengers suffered neck injuries. Is this an example of a leader of Soldiers?

"I am proud of the NCO Corps and will at all times conduct myself so as to bring credit upon the Corps ..."

The speeding automobile ran off the road and slid sideways almost 200 feet. The car flipped twice and hit a tree, killing both occupants who weren't wearing their seat belts. The drunk driver was an off-duty NCO. Is this an example of bringing credit upon the NCO Corps?

"Competence is my watchword. My two basic responsibilities will always be uppermost in my mind—accomplishment of my mission and the welfare of my Soldiers."

As the number one cannoneer knelt in front of his howitzer's breech to close the firing lock, the howitzer fired, striking him in the face. Was competence the watchword of this gun chief?

"All Soldiers are entitled to outstanding leadership; I will provide that leadership."

As we came through the ranks, our NCOs taught us the meaning of discipline, leadership and standards. We must pass that knowledge along. Effective leaders identify hazards in night movements and take the proper steps to mitigate those hazards. Teaching and enforcing standards prevents young Soldiers from screwing up crew drills and injuring themselves or someone else. Disciplined Soldiers wear their seat belts. When was the last time you made an on-the-spot correction when a Soldier failed to wear his seat belt? Caring for Soldiers requires us to take the hard right over the easy wrong, especially once the duty day is over. Let's be role models for our young Soldiers. They're entitled to nothing less.

Is the NCO Creed our standard or just another nice thought? I prefer to think our NCOs take the creed seriously and possess a keen desire to make a positive contribution to their units and the entire Army. Each hour of every day, an NCO somewhere in the world enforces a standard, provides leadership or instills discipline in a Soldier that might prevent a future accident. These NCOs exemplify our creed and keep our Soldiers safe. Let's all remember when it comes to safety: **"I will not forget, nor will I allow my comrades to forget that we are professionals, Noncommissioned Officers, leaders!"**

NCOs Lead the Way ... Safely! «

BEATING THE HEAT

COL JOHN CAMPBELL, M.D.
Command Surgeon
U.S. Army Combat Readiness Center

Although we're still experiencing the occasional chilly morning here at Fort Rucker, Ala., that hasn't stopped the U.S. Army Combat Readiness Center from preparing for the hot summer months ahead. It's now common for our Soldiers deployed all over the world to experience extreme temperature changes and work climates on a daily basis, not just in the usual summer months. The bottom line is we must stay ready for heat, cold and altitude changes throughout the year to protect Soldiers from unnecessary injuries.

Heat information has been force-fed to us throughout our careers, so I'm amazed how many heat-related injuries still occur. Despite commanders and leaders being engaged in all aspects of their Soldiers' preparedness, we still had numerous heat injuries reported in fiscal 2006. There are many underlying factors that contribute to heat injuries besides just performing strenuous work in a hot environment. A Soldier's overall physical condition, illness, hydration, fatigue, medications, alcohol, caffeine, energy drinks, excessive weight, enclosed environments such as helicopter cockpits or vehicle interiors, humidity and wind all can contribute to heat injuries.

Leaders and Soldiers must do more than just have water available. Using Composite Risk Management to assess and mitigate the potential health effects Soldiers might suffer during hot weather is critical. Here's how the five steps of CRM should be applied to reduce heat casualties.

1. Identify hazards: HEAT

- High heat category
- Exertion level of activity
- Acclimatization (don't forget altitude)
- Time (length of activity and time of day)

2. Assess hazards

- Ambient temperatures (i.e., a heat category assessment using wet bulb globe temperature should be conducted and adjusted for temperature variance)
- Know your Soldiers (e.g., their hydration status, risk factors or certain medications that might increase risk)

3. Develop controls

- Education: Establish standing operating procedures and train as you'll fight
- Planning: Develop a plan to have ample hydration sources available based on activity levels and provide rest cycles as needed
- Identification: Identify and note previous heat casualties along with current illnesses
- Develop a hydration monitoring system. Use current guidelines; Soldiers should hydrate continuously to produce urine that's clear to very light yellow in color

4. Implement controls

- Ensure risk decisions are made at the appropriate level
- Ensure controls are implemented
- Enforce and monitor the hydration standard
- Execute random checks
- Follow clothing and equipment recommendations

5. Supervise and evaluate

- Enforce SOPs through constant monitoring and frequent walk-throughs
- Conduct spot checks
- Develop contingency plans for injuries that might occur despite preventive measures
- Continually re-evaluate the situation and adjust controls as needed

Heat injury casualties continue to remain highest at our basic and advanced individual training posts. There are many reasons for this, including most training posts are located in southern states with high summer temperatures. Many new recruits aren't acclimated to these hot environments or physically conditioned for the increased intensity of military training. Illnesses are more frequent in crowded conditions, and trainees get minimal sleep due to their hectic training schedules. These units also know how, when and what to report to both the medical community and the USACRC. Still, with all these issues seemingly working against us, units do succeed and most Soldiers graduate without injury.

To help ensure their Soldiers' safety, leaders must stay engaged and be held accountable for their actions or, sometimes, inaction. Soldiers also have a responsibility to look out for each other and speak up if a comrade is in trouble. Someone always knows when a Soldier isn't at his peak performance level; buddies should make leaders aware of these situations to thwart a possible heat injury. Telling isn't a sign of being weak. It's being responsible and keeping our Soldiers in the fight.

Leaders, please use all the resources available to you and your Soldiers as we enter the hot summer months. Take a big-picture look at all the factors that can take a Soldier out of the fight, not just improvised explosive devices or a tragic HMMWV accident. Work closely with the medical community to conduct educational classes and prepare your Soldiers for all aspects of training and deployments. Don't let a heat casualty happen in your formation. Stay engaged and know what your Soldiers are doing! «

For more information on heat injury prevention, visit the U.S. Army Center for Health Promotion and Preventive Medicine Web site at chppm-www.apgea.army.mil.

WORK/REST AND WATER CONSUMPTION TABLE

These work/rest times and fluid replacement volumes will sustain performance and hydration for at least four hours of work in the specified heat category. Fluid needs can vary based on individual differences (± ¼ quart/hour) and exposure to full sun or full shade (± ¼ quart/hour).

- NL = no limit to work time per hour
- Rest = minimal physical activity (sitting or standing) accomplished in shade, if possible
- CAUTION: Hourly fluid intake should not exceed 1½ quarts; daily fluid intake should not exceed 12 quarts
- If wearing body armor, add 5 °F to WBGT index in humid climates
- If doing easy work and wearing nuclear, biological, chemical (MOPP 4) clothing, add 10 °F to WBGT index
- If doing moderate or hard work and wearing MOPP 4 clothing, add 20 °F to WBGT index

Heat Category	WBGT Index, °F	easy work		moderate work		hard work	
		Work/Rest (min)	Water Intake (qt/hr)	Work/Rest (min)	Water Intake (qt/hr)	Work/Rest (min)	Water Intake (qt/hr)
1 WHITE	78°- 81.9°	NL	½	NL	¾	40/20 min	¾
2 GREEN	82°- 84.9°	NL	½	50/10 min	¾	30/30 min	1
3 YELLOW	85°- 87.9°	NL	¾	40/20 min	¾	30/30 min	1
4 RED	88°- 89.9°	NL	¾	30/30 min	¾	20/40 min	1
5 BLACK	> 90°	50/10 min	1	20/40 min	1	10/50 min	1

easy

- Weapons maintenance
- Walking, hard surface, at 2.5 mph with < 30-lb load
- Marksmanship training
- Drill and ceremony
- Manual of arms

moderate

- Walking, loose sand, at 2.5 mph, no load
- Walking, hard surface, at 3.5 mph with < 40- lb load
- Calisthenics
- Patrolling
- Individual movement techniques, e.g., low crawl or high crawl
- Defensive position construction

hard

- Walking, hard surface, at 3.5 mph with ≥ 40-lb load
- Walking, loose sand, at 2.5 mph with load
- Field assaults

OH, DEER!

CHRIS FRAZIER
Editor, *Knowledge*
U.S. Army Combat Readiness Center

Striking a large animal on the roadway is serious business even when you're protected behind the sturdy frame of an automobile. In most cases, the accident is survivable. On a motorcycle, however, the outcome is almost never good, especially if the rider doesn't have the proper training or personal protective equipment. Fortunately for Keith Nolin, when nature called, he was prepared.

It was a misty January morning, and Nolin was traveling down a 40-mph stretch of road that leads to Fort Rucker's Knox Army Airfield, where he works for Army Fleet Support as an avionics, electronics and instruments mechanic. As he crested a hill, he spotted two deer—a buck and a doe—grazing on the side of the road. Since the road is surrounded by woods, the sight wasn't out of the ordinary. But this day would be different.

As Nolin approached, he kept a close eye on the deer. Suddenly, something startled the animals and they bolted across the road. Nolin said there was about a 3-foot gap between the buck and doe, so, rather than lock the brakes on the slick asphalt and risk putting the bike on the ground, he braced himself, leaned forward on the handle bars and aimed for the opening.

Nolin avoided the buck but slammed into the doe's right front quarter. The impact killed the 110-pound deer and sent her spinning around the side of the bike, striking Nolin in the left leg. Amazingly, he didn't lose control of the motorcycle; however, fearing his leg might've been broken in the collision, he continued driving toward the airfield.

"I was only about a mile from the guard shack, so I kept on because I wanted to be around someone when I got off the bike in case my leg was broken," he said. "If there was a problem, then someone would be able to assist me."

Nolin escaped the collision with little more than some bruising and soreness in his leg and foot, but his motorcycle wasn't so lucky. The 1989 Honda Pacific Coast, an 800cc midsize touring bike, suffered heavy damage to the front fairings and fork.

"The deer hit the crash bar before she hit me, and the fairing absorbed the brunt of the impact," Nolin said. "I got the tail end, but the bike protected me as it was designed to do. I'm glad I was on it rather than a smaller one."

So what did Nolin do correctly to come out of his animal encounter unhurt? Well, just about everything. He credits his training—he completed the Motorcycle Safety Foundation RiderCourse™ on post—PPE and 10 years of riding experience, as well as a little luck, for protecting him in the accident.

Nolin said the MSF courses give riders the tools they need to be confident in their skills. He believes every state should require mandatory motorcycle safety courses for all riders before they get on the road.

"(Riding) is fun, but you've got to be serious about it," he said. "If you're not, whenever you're subjected to something, you're not going to be ready and you might lock the rear or front tire and lose control of the motorcycle. If (riders) haven't had a safety course, they need to."

A heavily wooded post, Fort Rucker has more than its fair share of wildlife. When driving through certain areas on the installation, it's common knowledge you might be sharing the roadway with everything from wild boar to turkeys. Unfortunately for Nolin, he's had several previous encounters with the local fauna. Just a few weeks before the deer incident, an owl hit his motorcycle's right mirror. He's also had run-ins with armadillos, possums and too many rabbits to count.

Because the unexpected should always be expected, Nolin wears all his PPE when riding, including a jacket, full-finger gloves, padded boots and a full-face helmet, which he said gives him good visibility and has an anti-fog shield. Although he's required to wear his PPE while riding on post, it's a practice he'd follow even if he didn't work on Fort Rucker. Knowing you've done all you can to protect yourself makes the ride more enjoyable, he said.

"You've got to have good gear," Nolin said. "Had I gone down, I would've had something between me and the road. … There's no way I'd ride without my gear."

Nolin's supervisor, Chris Holmes, isn't surprised Nolin made it through his run-in with the deer virtually unscathed. The attention to detail Keith pays when preparing for a ride also shows up in his work.

"If there's a problem, he's going to fix it," said Holmes, an avionics supervisor for AFS. "He isn't going to leave something undone. That's why he's one of the best we've got."

Although his bike might now be totaled, Nolin's deer encounter won't stop him from riding a motorcycle to work. If his PC800 can't be fixed, he plans on buying a replacement for the two-wheeled commute he's made for the past eight years. Next time, though, he said he might stop and let the deer pass instead of trying to drive past them.

"They're just so unpredictable," he said. "You never know what they're going to do." «

FYI

According to the Insurance Institute for Highway Safety, more than 1.5 million deer-vehicle accidents occur annually in the United States, killing about 150 people and causing at least $1 billion in vehicle damage. In 2003, more than one-third of fatal vehicle-animal accidents involved motorcycle riders.

DEER CROSSING

Here are some tips to avoid deer-vehicle collisions from motorcyclecruiser.com:

- Deer travel in groups. One deer means there probably are more, so slow down immediately even if the one you see is off the road and running away.
- Heed deer crossing signs, particularly in the seasons and times of day when deer are active. Slow down, use your high beams and cover the brakes.
- The Wisconsin Department of Transportation says deer collisions peak in October and November, with a smaller peak in May and June. Such crashes between April and August are most likely to occur between 8 p.m. and midnight. Between November and January, 5 to 10 p.m. were the danger times.
- Additional good, powerful driving lights are worth their weight in gold on a deserted road at night. Alternatively, fit a bulb with a 100-watt high beam.
- Noise—a horn, revving your engine, etc.—might drive deer away.
- Flashing your headlights can break the spell that seems to cause deer to freeze.
- Don't challenge large animals by approaching them. A buffalo, moose, elk, mountain lion, bear or large deer might attack to drive you off. Stay back and consider turning and riding farther away.
- Stay away from an injured animal. It might attack or injure you unintentionally if it comes to and tries to escape.
- Don't swerve if a collision appears imminent. Braking hard right up to the point of impact is good, but you want to be stabilized if you do collide, which will give you the greatest chance of remaining upright.
- Spread out if riding in a group. This pattern will keep one rider who hits a deer from taking other riders down with him.
- Wear protective gear. As with other crashes, no one plans to hit an animal. The only way to be ready when it happens is to be ready on every ride.

experience COUNTS

STEVE KURTIAK
Driving Task Force
U.S. Army Combat Readiness Center

A few years ago, I was living with a friend in Westminster, Calif., and we both had motocross motorcycles. I'd sold my Honda 550 street bike before I moved to California and normally drove my pickup to get around. My friend, however, used his Honda 750 as his primary transportation. While I'd become familiar with the area during the three months I'd lived there, I didn't care too much for the congested roads.

My friend and I would occasionally trade vehicles when he worked third shift at the Long Beach refinery. The ride to Long Beach could be chilly and he didn't care for riding after dark. One day I was headed home on his motorcycle when I decided to stop and wash the bike. Just as I finished, it began to drizzle. The rain got heavier and completely soaked the streets as I rode home, but I wasn't concerned. I'd motocross raced in the rain when I lived in Michigan and had plenty of experience riding on wet roads. I was more concerned about the rain ruining my wash job!

I was near Disneyland and heading west when I approached a set of entrance and exit ramps for Interstate 5. Before crossing the interstate, I had to stop for a red light at an intersection. As I did, I pulled up between two stopped cars, which is legal in California, and waited for the light to change. When the light turned green, I checked traffic and entered the intersection. I pulled in front of the cars beside me and eased into the left lane. Just ahead, an approaching Mercedes moved into its left-turn lane to take the onramp for northbound I-5.

I checked my mirrors for traffic and when I looked forward, I saw the Mercedes stopped halfway across my lane. "No big deal," I thought as I rolled off the throttle, checked the right lane, turned on my signal and began moving over. I was shocked when the Mercedes suddenly pulled forward, stopped and blocked both lanes!

It seemed everything was happening in slow motion, but I didn't panic. I contemplated laying the bike down to avoid either going over the Mercedes' hood or trying to jump the huge curbs. I thought I could just barely miss the Mercedes, so that's what I chose to do. I was in a good motocross "attack" position—a slight crouch, my elbows up and feet squarely on the pegs. I was on both brakes and downshifting when the bike's rear tire broke traction. I eased off the brakes to avoid sliding and got on the binders again.

I almost made it but ended up hitting the Mercedes' front fender. I lifted my left leg to protect it from the impact and managed to keep the bike from going down. My thinking sped up to real time again and my first thought was, "This guy is going to run!" When I tried to downshift and turn around, I realized the shifter and foot peg were missing and the engine sounded terrible. I stopped, put the kickstand down and started running toward the Mercedes.

When the driver stepped out his first words were, "Why didn't you go around me?" By then I'd gotten over my initial shock and had my finger and most of my helmet in his face. Then I heard someone yelling at me. A witness gave me his card and said he couldn't believe I'd stayed on the bike. Apparently, my rear tire had lifted three or so feet off the ground.

I called my friend and told him what happened when the California Highway Patrol officer that was taking statements approached me laughing. He told me the Mercedes driver claimed the accident was my fault! The Honda tore a six-inch piece of rubber off the Mercedes' front bumper, but that bumper sheared the Honda's left foot peg and shifter and smashed the engine's left case. When it came to crunching metal, the Mercedes won hands-down.

> "I **CHECKED** my mirrors for **TRAFFIC** and when I looked forward, I saw the Mercedes **STOPPED** halfway across my lane. 'No big deal,' I thought … I was **SHOCKED** when the Mercedes suddenly pulled forward, stopped and **BLOCKED BOTH LANES**!"

However, wasn't I the real winner here? After all, I was still standing completely intact after the accident. I believe what saved me that day was five years' experience in American Motorcyclist Association-sanctioned motocross races. That experience helped me react calmly and think through my options up to the moment of impact. The skills I'd learned on dirt tracks were there when I needed them on the highway. The motocross attack position helped me stay centered on the bike and ready to jump off if needed.

Experience beats improvisation, which is one reason the AMA promotes motocross racing as one of the cheapest ways to gain good, perhaps even life-saving, skills. If you're interested, check out the AMA's Web site at http://www.ama-cycle.org. There you'll get information on training, gear and where to race. The Motorcycle Safety Foundation also offers its DirtBike School™ for riders interested in off-road biking. For more information, visit the school's Web site at http://www.dirtbikeschool.com.

While personal protective equipment can help protect you from injuries during a crash, nothing beats experience for helping you avoid or at least reduce the actual impact. Ride with experience to ride safe!

DID YOU KNOW?

Three out of four workers drive alone to work. According to the U.S. Census Bureau, "Among the 128.3 million workers in the United States in 2000, 76 percent drove alone to work. In addition, 12 percent carpooled, 4.7 percent used public transportation, 3.3 percent worked at home, 2.9 percent walked to work and 1.2 percent used other means (including motorcycle or bicycle)." More facts on transportation can be found at the U.S. Census Bureau Web site at http://www.census.gov/prod/2004pubs/c2kbr-33.pdf.

CONTROLLED FLIGHT Into Terrain

CW4 R. SCOTT HANDLON
Directorate of Evaluation and Standardization
Fort Rucker, Ala.

Before the start of Operations Enduring and Iraqi Freedom, the tactics a generation of attack helicopter pilots used to engage the enemy was a very static event. The aircraft entered an attack-by-fire position, engaged targets at a distance while hovering with an occasional position change and then departed the battle area to rearm and refuel.

Since 2001, we've had to relearn the tactics used during the Vietnam War. These methods involve a more dynamic flight technique than merely hovering and shooting, but the change has come at a cost. Over the past 20 months, the AH-64 community has experienced a dramatic increase in controlled flight into terrain accidents, resulting in five destroyed aircraft and five dead aviators. All these accidents occurred while the crews were conducting either running and diving fire or combat maneuvering flight. In three accidents, both crewmembers had focused their attention inside the cockpit until the aircraft descended below a recoverable altitude or contacted the ground without a recovery initiated.

The Army isn't alone; our sister services regularly perform running and diving fire and have had their share of CFIT accidents. These services have developed tactics, techniques and procedures to help mitigate the risk and include them in their training publications and local standing operating procedures. The Army uses its current aircrew training manuals as a means to address flight techniques, and many tasks reflect measures that mitigate the CFIT risk.

One such procedure is reflected in Task 1422: Perform Firing Techniques. The task description explains the three levels of AH-64 safing: releasing the weapons trigger, deselecting the weapon by the weapons action switch and selecting SAFE on the master arm switch/button. Any one of these actions will prevent the weapons system from firing, and only one of these, selecting SAFE, requires a crewmember to look inside the cockpit (preferably the pilot not on the controls).

These countermeasures were added to Training Circulars 1-251 and 1-238 after a CFIT accident killed one pilot and permanently disabled the other. In this accident, the pilot on the controls directed his attention inside the aircraft to toggle the master arm button to SAFE while coming off a running fire engagement. The co-pilot gunner continued to engage targets with the target acquisition designation sight, and within three seconds the aircraft descended to the ground.

Unfortunately, this same accident occurred yet again a short time later. As in the crash mentioned above, instead of flying the aircraft, the crew directed their attention inside the cockpit to safe the aircraft or perform other actions during a diving fire recovery. Although their intentions were good, this act distracted the crew long enough that the aircraft descended below a recoverable altitude. Both crewmembers were killed.

Another process used to mitigate CFIT can be found in Task 1415: Perform Diving Flight. In this task, the pilot on the controls must remain focused outside the aircraft and clear it throughout the maneuver, which includes the recovery. The pilot not on the controls must provide adequate warning to avoid traffic or obstacles (i.e., the ground) and announce when he's focusing his attention inside the cockpit. The crew also must recover the aircraft by either velocity, not to exceed or 500 feet above ground level, whichever comes first.

One item both these tasks lack is a control when the crew fails to follow the procedure due to human error. This control will be included in Change 1 of the AH-64 ATM. The procedure is a no-brainer and easy to perform. Before entering into running and diving or combat maneuvering flight, set the low altitude warning on the radar altimeter to your recovery altitude, taking into account any lag in the system (10 percent higher than the actual altitude for Longbow drivers). If the low altitude warning audio sounds or "LO" appears in the helmet display unit under the radar altimeter readout, the aircrew will give their sole attention to placing the aircraft back above the minimum altitude.

The pilot on the controls will ensure the aircraft's nose is placed equal to or above the horizon before adding power (somewhere around max continuous torque available) to preclude accelerating, descending flight. There will be no tactical play, radio or nonessential intercommunication system transmissions until the pilot on the controls states "back above" to the pilot not on the controls. This procedure works well for our sister services and should work for us. Remember, however, this procedure is used when the crew fails to perform the task to standard. If done properly, the low altitude warning should never sound and LO should not appear in the HDU.

The Combat Maneuvering Flight Handbook explains that the crew should always leave a way out. No one flies all maneuvers flawlessly every time, so give yourself a buffer. If you're performing CMF, complete the maneuver before slowing below minimum or going above maximum maneuvering airspeed, also known as bucket speed. If your bucket is 1 knot airspeed, as it will be in places like Afghanistan and Iraq in the summer, complete the maneuver before reaching that speed. The bucket is also a good indicator of how much maneuvering you can perform in given environmental conditions.

Although the CMF airworthiness release extends the performance envelope to +/- 120 degrees of bank and +/- 60 degrees of pitch, this increase in the max allowable maneuvering range was included so the operator wouldn't exceed a limit while performing these maneuvers and doesn't reflect actual environmental limitations. If your bucket speed is 1 knot, the maneuver might have to remain within the -10 maneuvering limits. Also, give yourself enough altitude to complete the recovery. The altitude standard for most maneuvers in the ATM is +/- 100 feet, and these are much more mundane than CMF.

A pitch back turn might go badly if you end up 60 degrees nose down at only 190 feet AGL, as a unit in Afghanistan recently discovered. Don't perform a break turn at 98 percent torque, 140 knots true airspeed and 200 feet AGL. You have no excess power available and minimum altitude to lose, and the maneuver is designed to trade altitude for airspeed and transition from level to diving flight. Your available energy states—altitude, airspeed and excess power available—aren't going to help, and you'll probably end up hurting the aircraft or yourself.

The flight regime we're operating in and the TTPs we use aren't dangerous, but they are unforgiving. Controls are in place to keep our aircrews safe yet able to perform their missions if done properly. Deviating from the standards, including not flying the aircraft, directing attention inside the aircraft when it should be outside and performing maneuvers at altitudes or airspeeds that don't allow complete recovery before ground contact, is costing the Army its aviators and equipment. Every aircraft we crash is doing the enemy's job for them, and they don't even have to fire a shot. Keep your head in the game, look outside the aircraft and give yourself an out to prevent future CFIT accidents and stay in the fight! «

COMING SOON!

BOB FRAZIER
Apache System Safety Manager
Redstone Arsenal, Ala.

Dive Recovery and Bank Angle Charts for AH-64D Operator's Manual

The AH-64D Apache Longbow is arguably one of the most demanding cockpit workload-intensive aircraft in the Army's inventory. With a proliferation of new technologies and complex missions, the potential exists to inundate crewmembers with distractions resulting in loss of situational awareness. Crews must maintain situational awareness in their area of orientation, closure rates and proximity to the ground. Failure to understand the aerodynamics and power requirements during maneuvering can have catastrophic results.

Since 2003, the Army has experienced an increasing number of Apache accidents involving controlled flight into terrain. Current missions place aircraft in an operational environment where the margin between power required and power available is minimal when performing aggressive maneuvers. To curtail the number of AH-64 accidents, the Apache Project Management Office wants to address CFIT mishaps by providing dive recovery and energy management charts to assist crews and increase situational awareness.

Currently, we can predict an aircraft's performance for any given environmental condition. The Advanced Attack Helicopter PMO, together with Aviation Engineering Directorate, Directorate of Evaluation and Standardization, U.S. Army Aviation Technical Test Center and Boeing, is developing performance planning charts to be included in the aircraft operator's manuals. Additionally, as these charts are verified and algorithms developed, the PMO is working toward a long-term solution of providing visual or audio cueing to the crews when the aircraft executes a dive or aggressive angle of bank that exceeds the aircraft's capabilities in the current operating environment.«

During some recent do-it-yourself home improvement projects, I was reminded of two things. First, I make mistakes; and second, they typically happen when I don't do things right in favor of an "appealing" alternative. This isn't unlike what happens in the cockpit or on the road when following the rules is pre-empted for a more attractive path. The trouble is these paths, enticing as they might be, have a nasty habit of ending in a smoking hole.

ASK ME ABOUT HUMAN FACTORS

DR. BRUCE JAEGER
Senior Advisor
U.S. Army Combat Readiness Center

While my shortcuts left me among the upright to consider my lessons learned, yours might not be so forgiving. In the end, what determines whether you're flying or driving above the ground or lying six feet beneath it has a lot to do with human factors. That being said, let's look at four components of human factors: ability, skill, knowledge and motivation/emotion.

The variables in the equation

- Abilities are those natural gifts you're born with such as good hand-eye coordination that can be refined through training.
- Skills come from training and are reinforced through practice.
- Knowledge comes from education, be it from classes, books or other people.
- ME is what motivates you to do something and how emotions affect your performance. It's the vital multiplier because without ME, the best abilities, skills and knowledge would be wasted through inaction. On the other hand, the wrong ME can drive bad decisions.

This systems view of human performance and error applies well to Army accidents. On the aviation side, controlled flight into terrain, and on both the aviation and ground sides, inadequate crew coordination, poor pre-mission planning and hot-dogging, are issues we see accident after accident. Looking at these components can help us understand why errors happen and find ways to prevent or fix them.

Ability

Ability applies to crew selection and crew coordination. Individual abilities should always be considered when choosing crews or discussing roles and responsibilities. Pairing folks with similar abilities might initially seem a good choice, but if they share the same weaknesses, there's no safeguard left to compensate.

Skills

Skills require regular practice. The Army recognizes skills degrade when they're not used, which is the primary reason for readiness level progression and other training as units re-cock. Do you take advantage of all your training opportunities? Do you strive for better skills, or are you simply hoping to get by? Remember, amateurs practice until they get it right; professionals train until they can't get it wrong.

Knowledge

Knowledge equates to currency. Aviators must keep up to date on new policies, procedures and safety of flight messages, along with changing risk assessments and the experiences of other pilots. The same concept applies to ground crews running convoys, conducting security missions or really just about anything. Keeping current allows leaders and Soldiers to better pre-plan their missions, ensuring they wear the proper personal protective equipment and their aircraft and vehicles are used correctly. Professionals stay current.

FYI

Knowledge **is now available in a new, easy-to-use online version! Check out the magazine Web site at https://crc.army.mil/Knowledge/index.html to find individual articles in easy-print PDF format or download an entire month's issue for even more safety information. You also can subscribe to the magazine through the site and even share your "war stories" with your fellow Soldiers! For more information or to provide feedback on** ***Knowledge*****, e-mail the editor at knowledge@crc.army.mil.**

FACTORS IMPACTING PERFORMANCE

Human performance can be incredibly stellar or unbelievably bad. When solid ability and good training are multiplied by the proper motivation, you have a powerful combination that produces awesome results.

P=(A+S+K)*ME

"When all else fails, the **THREAT** of **DISCIPLINE** against Soldiers who **WILLFULLY MAKE BAD CHOICES** can help them think twice before doing something **STUPID**."

Motivation/Emotion

While abilities, skills and knowledge form the foundation of your performance, whether you apply them properly depends on the ME component. Despite good abilities, skills and knowledge, almost all major mishaps have their roots in ME. In other words, Soldiers know what to do and how to do it properly but willfully choose an alternate course of action. Indiscipline, overconfidence and complacency are not knowledge or skills issues, they're "will" issues.

Why do we choose to misapply our abilities, skills and knowledge? It's because we tend to weigh what we should do against what we want to do and, if the latter looks like a better deal, we often go with it instead of what's right. Human error is usually about ME. This is what leads aviators to ignore published minimums because they seem to be a hassle, get in the way of the mission or just don't make sense.

Some Soldiers might cut corners because it makes things easier or seemingly more efficient. They also might take chances for the thrill or fun of it or to impress their peers. They might take things for granted and become complacent because the task at hand is a cinch and, in their minds, doesn't merit much attention or effort. They might drive or fly aggressively because they're ticked off at someone and need to vent. They might press too hard because of misplaced priorities such as "get-home-itis." These are all misguided motives, attitudes or emotions that can drive incorrect actions and increase risk.

Keeping the proper motivation, along with healthy emotions and good attitudes, is a challenge. The first step is to be aware of your own state of mind and that of others around you. Regularly check your emotional state for anger, frustration or apathy. Monitor yourself and your fellow Soldiers. Phrases like "watch this," "that takes too much time," "command is out of touch and doesn't understand the tactical environment," "no sweat" or "we're pressed for time" are indicators something unhealthy is brewing.

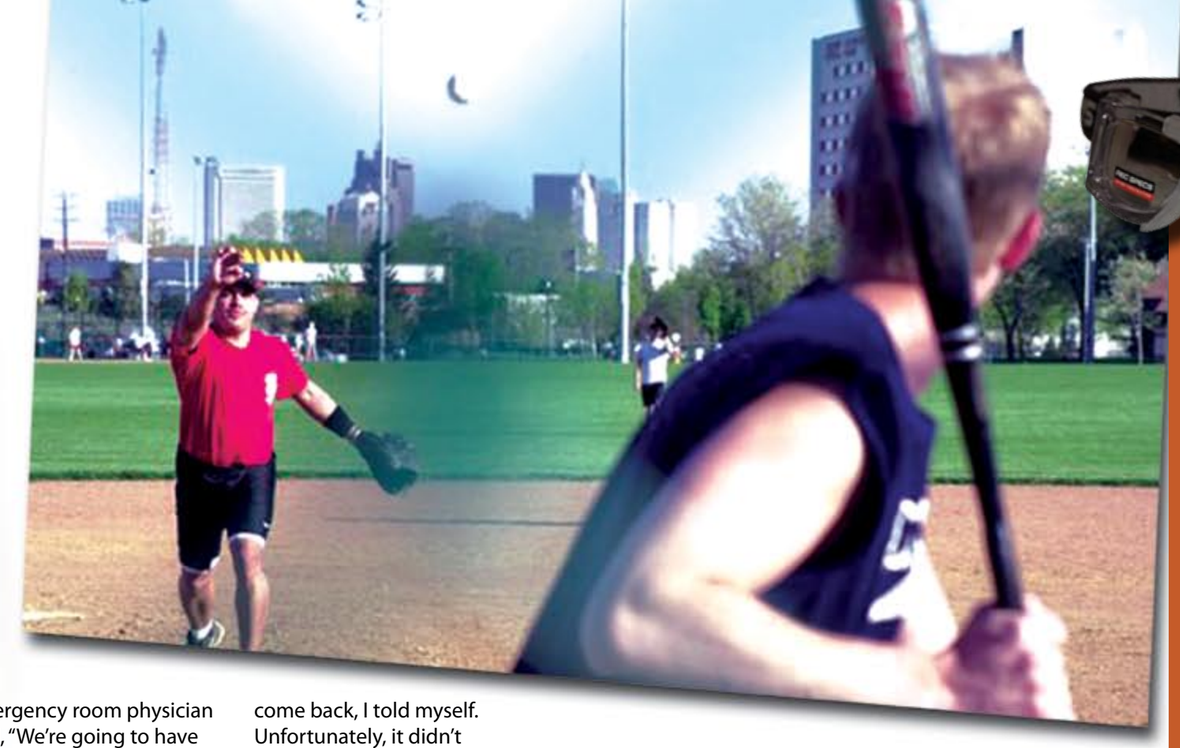
Set clear expectations for your own professional behavior and discuss them with those around you. Decide now the top priorities for your own and others' performance. These priorities must include doing the right thing and staying faithful to what's important. If you're the leader, make sure others know your expectations.

Your actions serve as a model for others whether you're an official leader or not, so be an example. This behavior reinforces doing things the right way and positions you as part of the solution rather than part of the problem. Get involved immediately whenever you see another Soldier displaying indiscipline, overconfidence or complacency. Recognize they prefer doing the things the wrong way and changing their mind is going to require some convincing. However, don't give up; take the time to help them see where they're headed.

Finally, make sure there's a real system of accountability in place. When all else fails, the threat of discipline against Soldiers who willfully make bad choices can help them think twice before doing something stupid.

Human performance can be incredibly stellar or unbelievably bad. When solid ability and good training are multiplied by the proper motivation, you have a powerful combination that produces awesome results. On the other hand, gaps in knowledge, inadequate training for the task and, especially, incorrect motivations and emotions reveal your vulnerability to human error. If you want to understand how human factors affect Soldier performance, just look at our equation because the answer is easy—simply A+S+K * ME.

THIS EYE'S HAD IT!



BO JOYNER
Robins Air Force Base, Ga.

It looked like an easy out when the ball left the burly right-hander's bat—a grounder just a step or two to my left. I shifted my feet and got into position, bending my knees and holding my glove close to the ground before I got in front of the bounding softball. The field's surface wasn't even and I saw the ball take two low hops, so I braced for the ball to hit squarely in the pocket of my trusty infielder's glove. I figured I could scoop it up and nail the runner at first, but I didn't get the chance. Instead, the ball hit another rise in the ground and struck me in the face. That's when the lights went out.

The next thing I remember was my teammates and opponents hovering over me. Someone put a wet rag over my left eye and told everyone, "He's all right. The cut's underneath his eye." A couple of my teammates picked up what was left of my glasses and handed the pieces to my wife, who'd raced from the bleachers to the huddle of people gathered around me. She'd been chasing our 2-year-old son and missed hearing the thud when the ball hit my face and knocked me down. (By the way, "softball" is a gross misnomer. Believe me, there was nothing soft about that ball!)

After I shook most of the cobwebs loose, my wife and a friend helped me into our vehicle and we headed to the emergency room. Now, I've been playing softball since I was old enough to hold a bat and suffered my share of twisted ankles, pulled muscles and "strawberries." This time, though, I could tell my injury was more serious.

I'd been wearing my prescription glasses during the game because I've always had poor eyesight. When I opened my swollen left eye during the examination, however, I couldn't see anything. While a CAT scan showed no broken facial bones or fragments from my glasses in my eye, I wasn't encouraged when the emergency room physician said, "We're going to have to get an ophthalmologist in here to see if we can save your vision."

The ophthalmologist checked me and offered a little more hope. He said, "The front part of your eye is filled with blood (hyphema) right now. When it clears out, your sight might come back completely. However, when the blood clears, it might reveal more damage to the back of your eye."

Although that "however" got to me, I went home thinking positive thoughts. Surely, the hyphema will clear up and my sight will come back, I told myself. Unfortunately, it didn't turn out that way.

When the blood cleared, the doctors could see my lens was ruptured and my retina, although not detached, was severely damaged. I had an hour-and-a-half operation where an ophthalmologist removed the lens and cleaned out the remaining blood. His best prognosis was that with an implant or contact lens I might get most of my peripheral vision back. Nevertheless, because of the retinal damage, I'd never recover my central vision in that eye.

His prognosis was right on the money. Using a contact lens today, I can see things out of the corner of my left eye, but when I try to look straight at something, it's covered by a black cloud. Even so, I've adjusted pretty well to my situation. Thanks to the overlap of my right eye's field of vision, I lost only about 20 percent of my total vision. My job requires me to work at a computer all day, so my right eye now tires more quickly than it used to. Fortunately, I can still drive.

There wasn't much I could've done to prevent that ball from hitting me. I didn't see the little rise in the field that lofted the ball into my face. However, while I couldn't have predicted what happened, I could've protected my eyes. Various models of protective sports eyewear that are shatterproof and can be ground to match your eyewear prescription are available at optometrists' offices. Sure, they're pricey, but that one-time expense is a lot cheaper than surgery. It's better to spend the money protecting your eyes now than to spend it later correcting the damage and still end up, like me, partially blind. ≪

FYI

Prevent Blindness America reports that hospital emergency rooms treat 40,000 sports-related eye injuries every year. Even non-contact sports such as badminton can present inherent dangers to the eyes. Any sport in which balls, racquets or flying objects are present pose potential for eye injury. For more information on sports eyewear, check out the following Web site: http://www.allaboutvision.com/sports/protection/htm.

SEE YOUR GAME

BOB VAN ELSBERG
Editor, *Knowledge*
U.S. Army Combat Readiness Center

Times have changed, and wearing safety glasses no longer earns you the title of "geek" on the court or field. In fact, wearing today's protective eyewear tells other players you take your sport seriously. After all, the better protected you are from injuries, the more aggressively you can play.

Dr. Calvin Denney runs America's largest vision center, Denney Vision, located in Dothan, Ala. He's been helping people both correct and protect their vision since becoming an optometrist in 1958. Here's what Dr. Denney said people should look for in protective eyewear.

"You need a lens that will withstand an impact and not break and shatter into the eyes," he said. The material of choice, he explained, is polycarbonate, a transparent polymer tough enough to take almost any impact. Much lighter than glass, it's scratch resistant and designed to absorb impacts.

Seeing clearly without worrying about disabling eye injuries can be a real plus in sports. So, how do you know the sports eyewear you're considering will really get the job done? To answer that question, the American Society for Testing and Materials has set standards for protective eyewear keyed to specific activities. For example, sports like baseball, racquetball, women's lacrosse and field hockey should conform to ASTM Standard F803. There are different ASTM standards for sports where helmets are worn, some of which are listed below:

- Paintball: ASTM Standard 1776
- Skiing: ASTM Standard 659
- Ice hockey: ASTM Standard F513
- Youth batters and base runners: ASTM Standard F910

It's not just the lens material that's important, however; you also need a frame that can withstand tough impacts. Just like lenses, frames should meet ASTM Standard F803. These frames can take impacts without coming apart or breaking and include a strap to ensure they stay on the wearer's head.

Not everyone who plays sports has perfect eyesight. Denney explained the need for corrective lenses can be met in a number of ways. For example, some sports eyewear contains separate inserts behind the protective lens. Wearers can have prescription lenses made to fit those inserts. With polycarbonate protective eyewear, wearers have other options. If they wear contacts, they can continue to do so safely as long as they're wearing their protective eyewear. If they wear eyeglasses, prescriptions often can be ground into the polycarbonate lens itself.

Good things don't come cheap, and quality protective eyewear can easily cost well over $100. Compared to the cost of an emergency room visit or a lifetime of visual impairment, though, good sports eyewear is a downright bargain. ≪

HAVE A SEAT

Using Child Safety Seats

JERRY WAIBEL
Safety Manager
POV Centralized Accident Investigations
U.S. Army Combat Readiness Center

Hundreds of children are killed or injured every year after being thrown against dashboards or windshields during vehicle accidents. Even a 20-mph collision can send an unrestrained child into such hard, unyielding objects with a 400-pound impact force. The easiest and most effective answer to preventing these type injuries is to use child safety seats, something many states now require by law.

Child safety seats work by keeping children from being thrown about inside a vehicle or, even worse, ejected during a crash. These seats absorb some of the crash impact and also distribute crash forces more evenly over the child's body. There have been documented instances where rescuers pulled infants unharmed from smashed child seats held together only by their fabric. During those accidents, the child seats acted as "cocoons" that protected the precious lives strapped inside them.

As a father of four, it amazes me the government has to impose laws enforcing the care and safety of children in automobiles. It's something we should do automatically for our children's safety. Yet, as I travel I see many adults who don't bother to wear their seat belts, much less ensure their children are restrained properly. You have to wonder what they're thinking, or if they're thinking at all.

By keeping children properly restrained, you solve at least two problems that can arise when kids ride with you. First, if you have an accident, it's easier to maintain immediate post-impact control of your vehicle if you're not trying to catch your children and protect them from flying around inside. Second, unrestrained children sometimes cause accidents by acting up, thinking the driver is too busy to intervene. If the situation gets so out of hand the driver has to respond, there's the danger of becoming distracted and having an accident. My children always ride in child seats for these reasons. I'd rather prevent an accident than try to survive one.

The challenge of keeping kids safe while riding in vehicles has received a lot of attention from the National Safe Kids Campaign, which offers the following child safety seat recommendations:

- Whenever possible, children 2 years old and younger should ride in safety seats secured to the vehicle's backseat. The middle of the backseat is the safest location for a child safety seat.
- Children under 1 year old and weighing less than 20 pounds should ride in a rear-facing seat. If a vehicle such as a standard-cab pickup doesn't have a backseat and the child must ride up front, ensure the passenger air bag is turned off.
- At 1 year old and 20 pounds, children can ride in a forward-facing seat equipped with internal harnesses.
- When a child reaches the manufacturer's height and weight limit of his forward-facing seat, he should ride in a belt-positioning booster seat used in combination with an adult lap and shoulder belt.

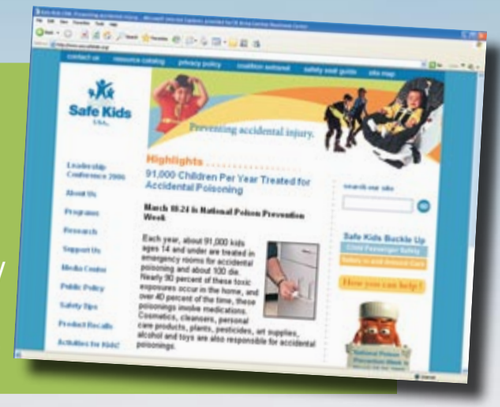
Children are ready for an adult safety belt without a booster when:

- They can sit against the back of the seat and bend their knees over the seat's edge.
- The lap belt makes good contact across their hips.
- The shoulder belt makes good contact across their chest and collarbone.

No matter how carefully we drive, we can't always avoid an accident. However, the one thing we can do is protect our children by ensuring they're restrained in a properly installed child safety seat anytime they're in a moving vehicle. For any parent, the importance of doing this should be a no-brainer. «

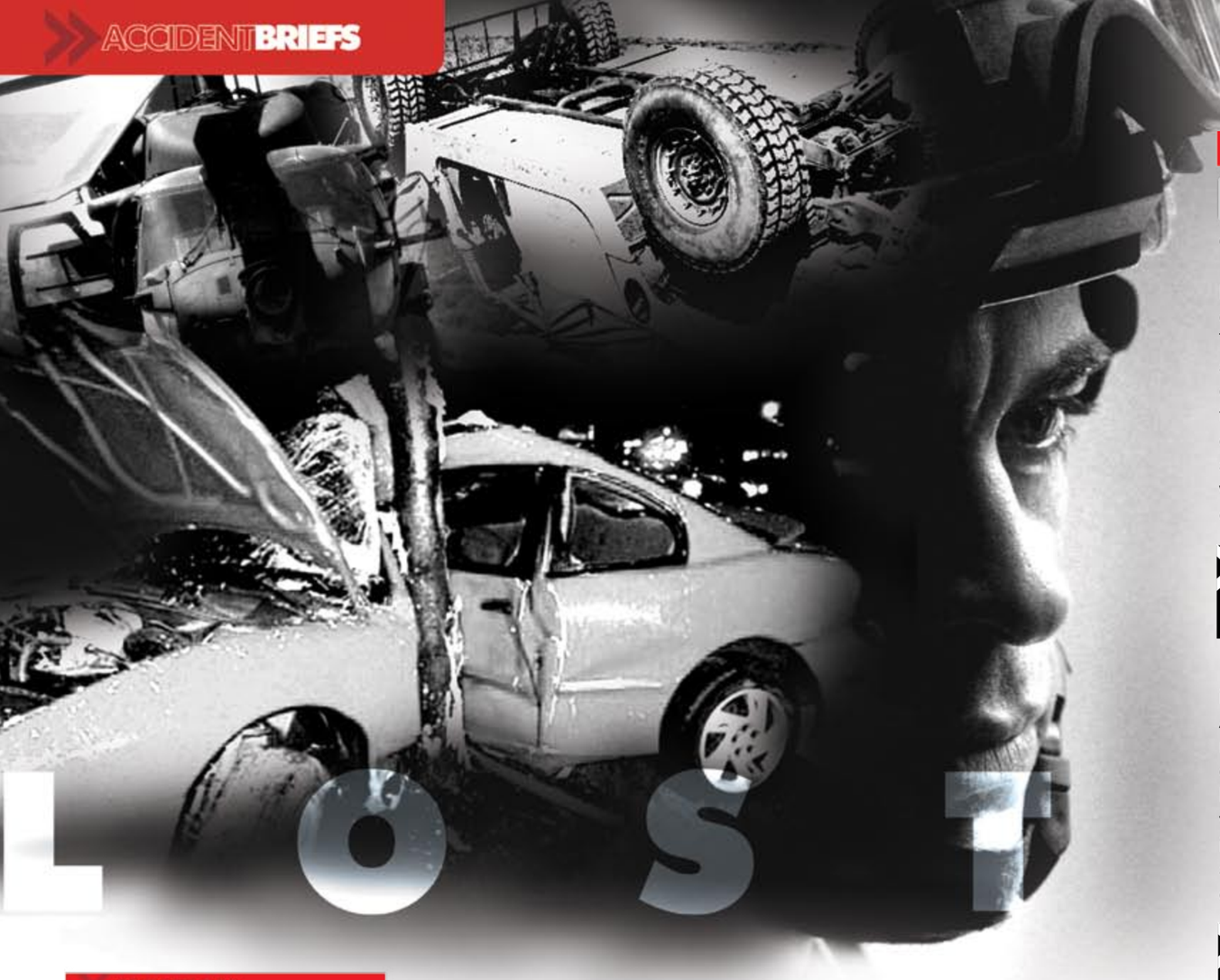
FYI

For more information on child restraint systems, visit the National Safe Kids Campaign Web site at http://www.usa.safekids.org/CPSWeek2006/carseat.html.



DID YOU KNOW?

Car seats for children have been manufactured since 1933. The Bunny Bear Company made several designs of children's car seats, but their purpose wasn't to protect the child in an accident. Instead, these seats confined the children, raised them above the passenger seat and made them more visible to adults in the front seat. The modern child safety seat was invented in England by Jean Ames in 1962.



AVIATION

CH-47

CLASS C D Model

■ The crew experienced a No. 2 engine transmission over-temp indication. Postflight inspection revealed the cooler fan shaft for the combining transmission gearbox had sheared in flight.

RC-12

CLASS A D Model

■ While preparing for landing, the crew noticed a landing gear unsafe light indication and executed emergency procedures. Initial contact with the airstrip was uneventful, but the main landing gear eventually collapsed.

UAS

RQ-7B

CLASS B

■ The aircraft operator received GENERATOR FAIL and GPS FAIL readings while the UAS was in flight. An emergency landing was attempted, but the recovery chute did not deploy. The UAS was destroyed when it struck the ground.

■ The UAS experienced an INSinDR # FAILURE indication during launch and immediately nosed down to ground impact. The main landing gear separated on contact, and all components suffered major damage.

■ A Shadow TUAS struck a parked UH-60 during a landing sequence.

GROUND

ACV

CLASS A

■ A Soldier was killed when his M2A2 Bradley Fighting Vehicle overturned into a body of water. The vehicle was traveling over a bridge when its track slipped off the road surface, causing it to flip into the water. The tank commander drowned in the accident. The vehicle's driver was not injured. The accident occurred in the early morning.

HAVE YOU REHEARSED YOUR ROLLOVER DRILLS?

■ A Soldier suffered fatal injuries when the towed M1117 Armored Security Vehicle he was riding in overturned. The driver of the towing ASV was changing lanes when it and the towed vehicle rolled over. The gunner in the towed ASV was ejected and fatally injured. The accident occurred in the early morning.

HAVE YOU DONE TRACK MAINTENANCE? NO TRACK, NO BRAKES!

AMV

CLASS A

■ Three Soldiers were killed after their M1114 HMMWV overturned into a canal during movement operations. Two Soldier passengers drowned and were pronounced dead at the scene. The driver was evacuated to a medical facility where he later died. Seat belt use was not reported. The accident occurred in the late morning.

CLASS B

■ A Soldier suffered a permanent partial disability when the M1025 she was driving veered out of control, overturned and struck a sand berm. Seat belt use was not reported. The accident occurred in the mid-evening.

ARE YOU CONDUCTING SMOOTH STEERING INPUTS FOR COMBAT-LOADED VEHICLES?

Personnel Injury

CLASS A

■ A Soldier drowned when the U.S. Marine Corps CH-46E he was riding in crashed into a lake. The Soldier was unaccounted for following passenger egress. The accident occurred in the mid-afternoon.

■ A Soldier suffered a fatal gunshot wound while on terminal leave. He and a friend were cleaning their weapons to prepare for a hunting trip and drinking. After cleaning and reassembling a .45-caliber pistol, the Soldier pulled back the slide and showed it to his friend. Both pronounced the weapon "clear." The Soldier then released the slide and, for unknown reasons, placed the weapon to the side of his head and pulled the trigger, discharging a round into his brain. He was taken to a medical facility and kept on life support until he died.

DO YOUR SOLDIERS KNOW THE DANGERS OF HORSEPLAYING WITH THEIR WEAPONS?

ARMY AIRCRAFT LOSSES

FY02 to Present

thru March 21, 2007

Hostile/ Non-hostile	
AH-64A/D	11/44
U/MH-60L	9/24
C/MH-47	6/14
OH-58D	8/22
TOTAL	34/104

ARMY GROUND LOSSES

FY07

thru Feb. 2007

Class A Fatalities	
AMV	9/11
ACV	7/4
PERSONNEL INJURY	16/16
WEAPONS HANDLING	6/6
FIRE/ EXPLOSION	0/0
TOTAL	32/31

LOADED OR UNLOADED?

You've probably heard the two primary rules of weapons handing: Never point a firearm at anything you don't intend to shoot and treat all firearms as if they're loaded. The danger is particularly great with semiautomatic handguns because there might not be any visual cues they're loaded. This is particularly true of older models that lack chamber indicators.

There are a number of scenarios where you can get into trouble. The most obvious is when a loaded magazine is inadvertently reinserted into the grip. Even if the slide is locked back so the chamber can be inspected, a less-alert or intoxicated person might not see the cartridge at the top of the magazine. Releasing the slide forward on what they think is an empty chamber, they have, in fact, loaded the pistol. Another possibility is the magazine is dented or dirty, temporarily preventing the follower from pushing the last cartridge to the top. While the magazine might appear unloaded, pushing it into the handgrip could jolt the follower free and allow any remaining cartridges to move into position for loading. Cycling the slide or releasing it from the locked-open position could chamber a round without the handler ever being aware. That ignorance, coupled with a person pointing a weapon at his or her own head, can quickly lead to a tragedy.

CLASS B

A Soldier's finger was partially amputated when it caught inside the pivot point hinge of an M929 5-ton tailgate. The Soldier had been helping reset the tailgate. Personal protective equipment use was not reported. The accident occurred in the late morning.

DRIVING

POV

CLASS A

A Soldier suffered fatal injuries when he lost control of his POV while attempting to pass another vehicle, flipping his car several times.

DO YOUR SOLDIERS WEAR THEIR SEAT BELTS?

POM

CLASS A

A Soldier was killed when he lost control of his sport bike on a curve. The motorcycle skidded and struck a fence before coming to rest. The Soldier was wearing all required PPE.

HAVE YOU TAKEN A MOTORCYCLE RIDER'S COURSE?

A Soldier suffered fatal injuries when he lost control of his motorcycle on a curve, causing it to hit an oncoming sport utility vehicle. The Soldier was wearing all required PPE but speeding and was thrown from the bike upon impact.

A Soldier suffered partial amputation of both legs when he lost control of his sport bike and hit a guardrail. The Soldier was wearing all required PPE but speeding.

HAVE YOU TALKED WITH YOUR SOLDIERS ABOUT THE DANGERS OF SPEEDING?

POV DRIVING LOSSES FY07

thru Feb. 2007

Class A accidents/Soldiers killed	
CARS	16/19
VANS	1/1
TRUCKS	10/10
MOTORCYCLES	9/8
OTHER*	6/5

*Includes tractor-trailers, unknown POVs and bicycles

43 TOTAL DEATHS

FY06: 42 3 year average: 46

TRiPS FOR YOUR TRIPS!

Soldiers will notice something different about the tool they've come to depend on for assessing risk during POV trips. What was formerly known as ASMIS-2 is now the Travel Risk Planning System, or TRiPS, and it's been adopted across the Department of Defense for use by the Navy, Marines, Coast Guard and Air Force. The name change and expanded reach don't change the tool's value, however. Soldiers will continue to input and receive hazard and risk mitigation information based on their trip specifics, including vehicle type, driver age, destination, seat belt use and more. However, supervisors will have more oversight thanks to a new feature that allows them to view the activity of their subordinates two levels down, thereby expanding leadership engagement and awareness.

TRiPS was implemented in the Army as ASMIS in 2004 and to date, Soldiers have completed more than 1,783,000 assessments with only six fatalities reported during assessed trips. In the year since the Navy released TRiPS, no fatalities have been reported among the nearly 30,000 Sailors registered for assessments. These statistics show fatal POV mishaps might be less likely among service members who use the tool. For more information or to register for TRiPS, visit the U.S. Army Combat Readiness Center's Web site at https://crc.army.mil.


Be an
ENGAGED
leader
Someone always knows ...
Don't just stand by if that
"someone" is you.
ENGAGE - prevent an
accident from occurring.
U.S. ARMY
ARMY STRONG.
U.S. ARMY COMBAT READINESS CENTER
HTTPS://CRC.ARMY.MIL
own the EDGE
Leading on the Edge

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own the EDGE
Leading on the Edge


ASMIS-2 reaches across DOD and is now TRiPS.
So before you hit the road, use
TRiPS to make it home safe.
TRAVEL RISK
TRiPS
PLANNING SYSTEM
https://crc.army.mil
ENGAGED
LEADERSHIP
AHEAD
U.S. ARMY
ARMY STRONG.
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